

**Supplemental Table S8a.** Absolute incidence rates per 1000 person-years (95% confidence interval, CI) of all cause cancer **BEFORE THE 18th BIRTHDAY** in incident cases of childhood onset (< 18 years) IBD patients and matched general population reference individuals from **1964-2014** (first year of follow-up included).

	Inflammatory ulcerative bowel disease colitis	Crohn's disease	IBD- unclassified	Gen. Pop.
N Total	9405	4648	3768	989
N Events	20	9	9	2
Incidence proportion	0.2%	0.2%	0.2%	0.2%
Person-years	34,907	18,504	13,008	3395
Incidence rate	0.6 (0.4 - 0.9)	0.5 (0.3 - 0.9)	0.7 (0.4 - 1.3)	0.6 (0.2 - 2.4)
<b>Years of follow-up and sex</b>				
0 - <1 years of follow-up	0.9 (0.5 - 1.9)	1.0 (0.4 - 2.5)	0.9 (0.3 - 2.8)	1.1 (0.2 - 8.1)
1 - <5 years of follow-up	0.3 (0.1 - 0.7)	0.2 (0.1 - 0.8)	0.5 (0.2 - 1.4)	0 (-)
≥5 years of follow-up	0.8 (0.4 - 1.8)	0.7 (0.2 - 2.1)	0.9 (0.2 - 3.6)	1.5 (0.2 - 10.9)
Female	0.6 (0.4 - 1.2)	0.6 (0.2 - 1.4)	0.6 (0.2 - 1.7)	1.3 (0.3 - 5.3)
Male	0.5 (0.3 - 1.1)	0.4 (0.2 - 1.1)	0.8 (0.4 - 1.8)	0 (-)
<b>Age of IBD onset</b>				
<6 years	0.8 (0.2 - 2.4)	0.8 (0.2 - 3.2)	1.1 (0.2 - 7.6)	0 (-)
<10 years	0.8 (0.4 - 1.5)	0.7 (0.3 - 1.8)	0.9 (0.3 - 2.8)	0.9 (0.1 - 6.2)
<15 years	0.5 (0.3 - 0.8)	0.4 (0.2 - 0.8)	0.6 (0.3 - 1.4)	0.7 (0.2 - 2.9)
<17 years	0.5 (0.3 - 0.8)	0.4 (0.2 - 0.8)	0.7 (0.4 - 1.4)	0.6 (0.2 - 2.4)
<18 years	0.6 (0.4 - 0.9)	0.5 (0.2 - 0.9)	0.7 (0.4 - 1.3)	0.6 (0.2 - 2.4)
<b>Year of IBD onset</b>				
2002-2014	0.6 (0.3 - 1.2)	0.3 (0.1 - 1.2)	0.8 (0.3 - 1.9)	1.2 (0.3 - 5.5)
1990-2001	0.4 (0.1 - 1.1)	0.2 (0.0 - 1.2)	0.8 (0.3 - 2.6)	0 (-)
1980-1989	0.5 (0.2 - 1.6)	0.9 (0.3 - 2.7)	0 (-)	0 (-)
1964-1979	1.0 (0.4 - 2.8)	1.2 (0.4 - 3.8)	0.9 (0.1 - 6.2)	0 (-)
<b>Complications during follow-up*</b>				
Extra intestinal manifest	1.4 (0.2 - 9.7)	0 (-)	0 (-)	16.3 (2.29 - 116) -
Primary sclerosing cholangitis	0.9 (0.1 - 6.4)	0 (-)	0 (-)	7.8 (1.1 - 55.2) -
<b>Colitis during follow-up*</b>				
Colitis ≥10 years	0 (-)	0 (-)	0 (-)	0 (-)
Colitis	0.6 (0.2 - 1.3)	0.7 (0.2 - 2.1)	0.7 (0.2 - 2.6)	0 (-)
<b>IBD Surgery*</b>				
Bowel surgery	1.4 (0.6 - 3.4)	3.2 (1.2 - 8.6)	0.5 (0.1 - 3.5)	0 (-)
Perianal surgery	0 (-)	0 (-)	0 (-)	0 (-)
<b>IBD Medication*</b>				
N incident cases from 1 July 2005	3383	1480	1435	468
Never thiopurines nor anti-TNF	0.6 (0.2 - 2.4)	0.6 (0.1 - 4.2)	0.9 (0.1 - 6.1)	0 (-)
Only thiopurine	0.9 (0.3 - 2.6)	0 (-)	1.2 (0.3 - 4.8)	2.2 (0.3 - 15.6)
Only anti-TNF	0 (-)	0 (-)	0 (-)	0 (-)
Thiopurines and anti-TNF	0 (-)	0 (-)	0 (-)	0 (-)
<b>At least one first-degree relative with</b>				
Cancer	0.4 (0.2 - 1.1)	0.4 (0.1 - 1.4)	0.3 (0.0 - 2.2)	1.1 (0.2 - 8.8)
Cancer before age 50 years	0.6 (0.2 - 1.8)	0.7 (0.2 - 2.8)	0 (-)	2 (0.28 - 14.2)
Cancer after age 50 years	0.2 (0.0 - 1.5)	0 (-)	0.6 (0.1 - 4.4)	0 (-)

\* In stratified analyses, follow-up started at the date of the first corresponding register entry.

**Supplemental Table S8b.** Absolute incidence rates per 1000 person-years (95% CI) of all cause cancer in incident cases of childhood onset (<18 years) IBD patients and matched general population reference individuals from **2002-2014** (first year of follow-up included).

	Inflammatory ulcerative bowel disease colitis	Crohn's disease	IBD-unclassified	Gen. Pop.
N Total	4642	2077	1992	573
N Events	55	28	19	8
Incidence proportion	1.2%	1.3%	1%	1.4%
Person-years	30,506	14,191	13,153	3162
Incidence rate	1.8 (1.4 - 2.4)	2.0 (1.4 - 2.9)	1.4 (0.9 - 2.3)	2.5 (1.3 - 5.1)
<b>Years of follow-up and sex</b>				
0 - <1 years of follow-up	1.1 (0.5 - 2.7)	0.5 (0.1 - 3.5)	1.6 (0.5 - 4.8)	1.8 (0.3 - 13.3)
1 - <5 years of follow-up	0.6 (0.3 - 1.1)	0.4 (0.1 - 1.4)	0.8 (0.3 - 1.9)	0 (-)
≥5 years of follow-up	3.7 (2.7 - 5.5)	4.4 (3.3 - 6.6)	2.2 (1.2 - 4.4)	7.7 (3.3 - 14.6)
Female	2.2 (1.5 - 3.2)	2.8 (1.8 - 4.4)	1.4 (0.7 - 2.8)	2.8 (1.1 - 7.4)
Male	1.5 (1.1 - 2.2)	1.3 (0.7 - 2.4)	1.5 (0.8 - 2.6)	2.3 (0.9 - 6.2)
<b>Age of IBD onset</b>				
<6 years	0.7 (0.1 - 5.5)	1.4 (0.2 - 9.6)	0 (-)	0 (-)
<10 years	1.0 (0.4 - 2.5)	0.5 (0.1 - 3.4)	1.2 (0.3 - 4.9)	2.2 (0.3 - 15.3)
<15 years	0.8 (0.5 - 1.4)	0.8 (0.4 - 1.8)	0.6 (0.3 - 1.6)	1.8 (0.6 - 5.4)
<17 years	1.5 (1.1 - 2.2)	1.5 (0.9 - 2.3)	1.3 (0.8 - 2.2)	2.3 (1.1 - 5.5)
<18 years	1.8 (1.4 - 2.4)	2.0 (1.4 - 2.9)	1.4 (0.9 - 2.3)	2.5 (1.3 - 5.1)
<b>Year of IBD onset</b>				
2002-2014	0.2 (0.0 - 1.7)	0 (-)	0.6 (0.1 - 4.1)	0 (-)
1990-2001	1.6 (1.1 - 2.6)	1.4 (0.7 - 2.9)	1.5 (0.7 - 3.2)	2.8 (0.9 - 8.8)
1980-1989	2.4 (1.7 - 3.3)	2.8 (1.8 - 4.4)	1.6 (0.9 - 2.9)	3.7 (1.5 - 8.8)
1964-1979	0.2 (0.0 - 1.7)	0 (-)	0.6 (0.1 - 4.1)	0 (-)
<b>Complications during follow-up*</b>				
Extra intestinal manifest	5.4 (2.4 - 12.1)	7.2 (2.3 - 22.3)	0 (-)	26.2 (8.44 - 81.1)
Primary sclerosing cholangitis	4.0 (1.8 - 8.8)	4.3 (1.6 - 11.5)	2.6 (0.4 - 18.5)	4.8 (0.7 - 33.9)
<b>Colitis during follow-up*</b>				
Colitis ≥10 years	7.7 (2.9 - 20.6)	4.4 (0.6 - 28.3)	10.1 (2.54 - 40.6)	14.3 (2.01 - 101)
Colitis	2.0 (1.4 - 2.9)	2.3 (1.4 - 3.7)	1.5 (0.8 - 3.3)	2.2 (0.9 - 5.3)
<b>IBD Surgery*</b>				
Bowel surgery	3.3 (1.7 - 6.3)	3.3 (1.1 - 10.4)	3.1 (1.3 - 7.4)	4.5 (0.6 - 31.9)
Perianal surgery	2.0 (0.8 - 5.4)	8.5 (2.1 - 33.8)	1.2 (0.3 - 4.9)	0 (-)
<b>IBD Medication*</b>				
N incident cases from 1 July 2005	3383	1480	1435	468
Never thiopurines nor anti-TNF	1.0 (0.5 - 2.3)	1.6 (0.7 - 3.9)	0.5 (0.1 - 3.6)	0 (-)
Only thiopurine	1.9 (1.1 - 3.3)	1.4 (0.5 - 3.7)	2.2 (1.1 - 4.7)	2.6 (0.6 - 10.2)
Only anti-TNF	0 (-)	0 (-)	0 (-)	0 (-)
Thiopurines and anti-TNF	0.9 (0.2 - 3.5)	0 (-)	0.8 (0.1 - 5.5)	4.4 (0.6 - 28.8)
<b>At least one first-degree relative with</b>				
Cancer	2.3 (1.3 - 3.9)	3.3 (1.5 - 5.9)	1.2 (0.4 - 3.9)	3.3 (0.8 - 13.1)
Cancer before age 50 years	1.4 (0.6 - 3.2)	2.2 (0.8 - 5.8)	0.5 (0.1 - 3.8)	2.1 (0.3 - 14.7)
Cancer after age 50 years	4.5 (2.2 - 9.5)	4.6 (1.7 - 12.3)	3.6 (0.9 - 14.4)	7.8 (1.1 - 55.2)

\* In stratified analyses, follow-up started at the date of the first corresponding register entry.

**Supplemental Table S9a.** Adjusted† hazard ratios (HR) for all cause cancer during all available follow-ups in childhood onset (<18 years) inflammatory bowel disease (IBD) patients and matched general population comparators in 1964-2014 (first year of follow up included).

	Inflammatory bowel disease n/pc, HR (95%CI)‡	Ulcerative colitis n/pc, HR (95%CI)‡	Crohn's disease n/pc, HR (95%CI)‡	IBD-Unclassified n/pc, HR (95%CI)‡
Total	497/1487, 2.2 (2.0-2.5)	299/776, 2.6 (2.3-3.0)	153/576, 1.7 (1.5-2.1)	45/134, 2.0 (1.5-2.8)
0 - <1 years of follow-up	8/93, 3.6 (1.5-7.8)	4/46, 4.4 (1.2-13.5)	3/37, 4.2 (0.9-15.3)	1/10, 1.7 (0.1-9.7)
1 - <5 years of follow-up	16/336, 1.5 (0.9-2.5)	7/170, 1.4 (0.6-2.8)	9/133, 2.4 (1.1-4.8)	0/33, 0 (0.0-1.1)
≥5 years of follow-up	473/1058, 2.2 (2.0-2.5)	288/561, 2.7 (2.4-3.1)	141/406, 1.7 (1.4-2.0)	44/92, 2.2 (1.6-3.1)
Female	267/675, 1.5 (1.4-1.7)	152/356, 1.7 (1.4-2.0)	87/254, 1.3 (1.0-1.6)	28/66, 1.7 (1.1-2.4)
Male	230/811, 4.6 (4.0-5.4)	147/421, 6.3 (5.2-7.7)	66/322, 3.1 (2.3-4.0)	17/68, 3.3 (1.9-5.6)
<b>Age of IBD onset</b>				
<6 years	8/56, 3.0 (1.3-6.4)	5/39, 2.7 (0.9-6.6)	2/11, 12.4 (1.4-116.0)	1/5, 1.5 (0.1-10.0)
<10 years	44/210, 2.6 (1.8-3.6)	27/135, 2.4 (1.6-3.6)	13/55, 3.7 (1.9-6.8)	4/19, 1.9 (0.6-4.9)
<15 years	227/823, 2.5 (2.2-2.9)	146/456, 2.8 (2.3-3.3)	62/295, 2.2 (1.6-2.8)	19/72, 1.9 (1.2-3.1)
<17 years	384/1230, 2.3 (2.1-2.6)	247/657, 2.9 (2.5-3.3)	106/463, 1.7 (1.4-2.1)	31/110, 1.8 (1.2-2.7)
<18 years	497/1487, 2.2 (2.0-2.4)	299/776, 2.6 (2.3-3.0)	153/576, 1.7 (1.5-2.1)	45/134, 2.0 (1.5-2.8)
<b>Age at end of follow up</b>				
0 to <30 years	196/469, 6.8 (5.7-8.1)	114/239, 7.4 (5.8-9.4)	61/185, 5.7 (4.2-7.7)	21/45, 7.1 (4.0-12.3)
≥30 to <45 years	207/527, 2.9 (2.5-3.4)	127/288, 3.4 (2.7-4.1)	65/194, 2.5 (1.9-3.2)	15/46, 2.0 (1.1-3.5)
≥45 years	94/491, 0.8 (0.7-1.0)	58/250, 1.1 (0.8-1.5)	27/198, 0.5 (0.4-0.8)	9/43, 0.8 (0.4-1.5)
<b>Year of IBD onset</b>				
2002-2014	55/305, 2.7 (2.0-3.6)	28/142, 2.8 (1.8-4.2)	19/132, 2.4 (1.4-3.9)	8/32, 3.2 (1.3-6.7)
1990-2001	129/414, 2.6 (2.2-3.2)	70/226, 2.6 (2.0-3.3)	45/147, 2.7 (1.9-3.8)	14/41, 2.7 (1.4-4.7)
1980-1989	139/391, 2.2 (1.8-2.6)	88/205, 2.8 (2.2-3.5)	42/155, 1.6 (1.1-2.2)	9/32, 1.6 (0.7-3.0)
1964-1979	174/377, 1.9 (1.6-2.3)	113/204, 2.6 (2.1-3.1)	47/142, 1.3 (0.9-1.7)	14/30, 1.6 (0.9-2.7)
<b>Complications during follow-up*</b>				
Extra intestinal manifestations	34/44, 2.0 (1.3-2.8)	22/21, 3.1 (1.8-4.9)	7/19, 0.8 (0.3-1.6)	5/4, 4.2 (1.3-11.3)
Primary sclerosing cholangitis	76/60, 6.6 (4.9-8.7)	64/45, 7.3 (5.3-9.9)	8/9, 5.1 (2.1-11.6)	4/5, 4.3 (1.2-13.1)
<b>Colitis*</b>				
Colitis ≥10 years	74/79, 3.9 (2.9-5.5)	49/47, 4.0 (2.9-5.6)	18/23, 3.6 (2.0-6.1)	7/9, 3.4 (1.3-7.7)
Colitis	229/460, 2.1 (1.8-2.4)	153/264, 2.3 (1.9-2.7)	56/140, 1.9 (1.4-2.5)	20/56, 1.6 (1.0-2.5)
<b>IBD surgery*</b>				
Bowel surgery	227/458, 2.0 (1.8-2.4)	110/161, 2.7 (2.2-3.3)	89/261, 1.5 (1.2-1.9)	28/36, 2.5 (1.6-3.8)
Perianal surgery	66/161, 1.6 (1.2-2.1)	20/53, 1.3 (0.8-2.0)	37/92, 1.8 (1.2-2.5)	9/16, 2.0 (0.9-3.9)
<b>IBD Medications*</b>				
N incident cases from 1 July 2005	3383	1480	1435	468
Never thiopurines nor anti-TNF	6/58, 2.7 (1.0-6.2)	5/31, 4.1 (1.3-11.0)	1/20, 1.7 (0.1-10.2)	0/7, 0 (0-7.2)
Only thiopurine	13/79, 4.2 (2.1-7.9)	4/35, 3.7 (1.0-10.8)	7/35, 6.6 (2.4-16.7)	2/9, 2.2 (0.3-8.6)
Only anti-TNF	too small sample	too small sample	too small sample	too small sample
Thiopurines and anti-TNF	2/28, 1.3 (0.2-4.7)	0/10, 0 (0-3.6)	1/15, 1.2 (0.1-6.7)	1/3, 10.0 (7.3-13.9)
<b>At least one first degree relative with</b>				
Cancer	250/618, 2.2 (1.9-2.6)	146/322, 2.6 (2.2-3.2)	83/244, 1.8 (1.4-2.2)	21/52, 2.1 (1.3-3.3)
Cancer before age 50 years	105/256, 2.9 (2.3-3.6)	64/126, 4.4 (3.2-5.8)	34/103, 2.1 (1.4-3.0)	7/26, 1.5 (0.6-3.1)
Cancer after age 50 years	145/362, 1.9 (1.6-2.3)	82/196, 2.0 (1.6-2.5)	49/140, 1.6 (1.2-2.2)	14/26, 2.6 (1.4-4.5)

†Adjusted for matching variables (i.e. sex, age at diagnosis, calendar year at diagnosis and county).

# N cancers in IBD-patients/person centuries of follow up among IBD-patients, Hazard Ratio with 95% Confidence Interval.

\* In these stratified analyses follow-up started at the date of the first corresponding code.

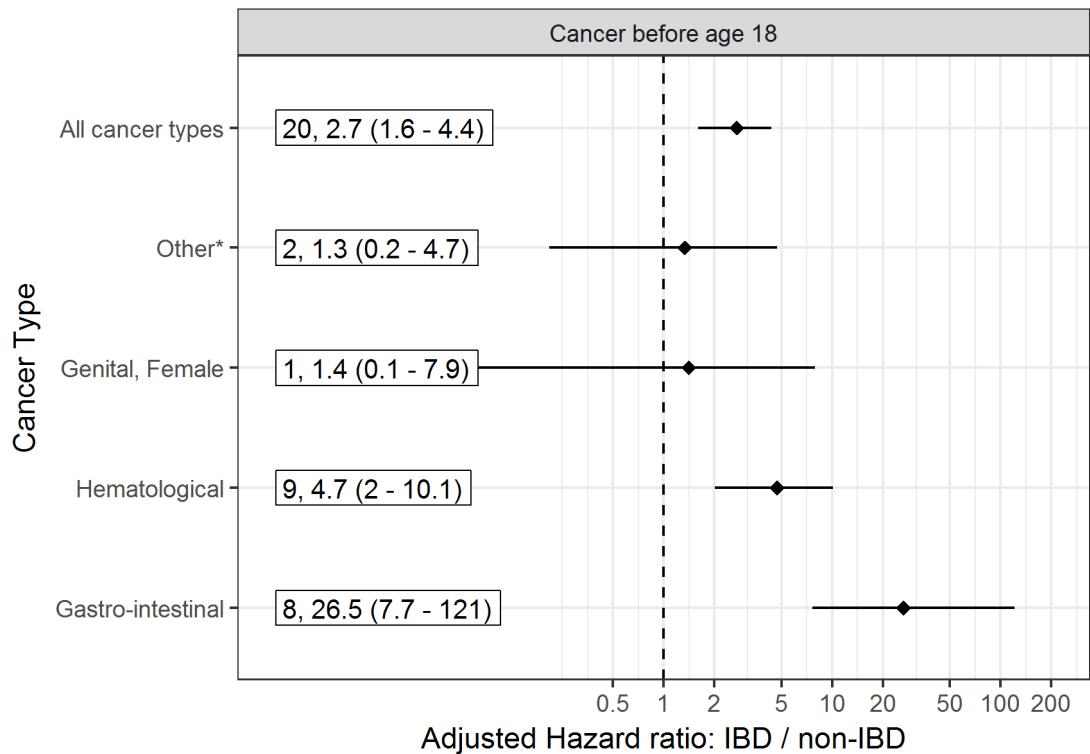
**Supplemental Table S9b.** Adjusted† hazard ratios (HR) for all cause cancer **before the 18<sup>th</sup> birthday** in childhood onset (<18 years) inflammatory bowel disease (IBD) patients and matched general population comparators in 1964-2014 (first year of follow up included).

	Inflammatory bowel disease n/pc, HR (95%CI)‡	Ulcerative colitis n/pc, HR (95%CI)‡	Crohn's disease n/pc, HR (95%CI)‡	IBD-Unclassified n/pc, HR (95%CI)‡
Total	20/349, 2.7 (1.6-4.4)	9/185, 2.6 (1.2-5.2)	9/130, 4.1 (1.8-8.6)	2/34, 1.2 (0.2-4.0)
0 - <1 years of follow-up	8/85, 4.4 (1.8-9.8)	4/42, 5.0 (1.3-15.7)	3/34, 5.9 (1.2-24.2)	1/9, 2.0 (0.1-12.2)
1 - <5 years of follow-up	6/192, 1.4 (0.5-3.0)	2/99, 1.1 (0.2-3.6)	4/74, 2.7 (0.8-7.3)	0/19, 0 (0-2.3)
≥5 years of follow-up	6/73, 5.0 (1.7-12.8)	3/44, 4.2 (0.9-15.2)	2/22, 6.4 (1.1-87.7)	1/7, 3.3 (0.2-25.8)
Female	10/155, 3.6 (1.6-7.1)	5/85, 4.5 (1.4-12.3)	3/54, 2.7 (0.6-8.7)	2/15, 3.3 (0.5-14.3)
Male	10/195, 2.2 (1.1-4.2)	4/100, 1.7 (0.5-4.5)	6/76, 5.4 (1.9-14.3)	0/19, 0 (0-1.9)
<b>Age of IBD onset</b>				
<6 years	3/39, 7.5 (1.5-34.2)	2/25, 9.9 (1.2-82.8)	1/9, 7.0 (0.31-87.9)	no events
<10 years	9/113, 5.6 (2.4-12.4)	5/69, 5.0 (1.6-14.0)	3/33, 10.3 (1.9-56.0)	1/11, 3.2 (0.2-25.2)
<15 years	15/292, 2.8 (1.5-4.8)	6/157, 2.5 (0.9-5.7)	7/107, 4.4 (1.7-10.3)	2/28, 1.4 (0.2-5.0)
<17 years	18/341, 2.7 (1.5-4.4)	7/181, 2.2 (0.9-4.8)	9/127, 4.5 (2.0-9.6)	2/33, 1.2 (0.2-4.3)
<18 years	20/349, 2.7 (1.6-4.4)	9/185, 2.6 (1.2-5.2)	9/130, 4.1 (1.8-8.6)	2/34, 1.2 (0.2-4.0)
<b>Year of IBD onset</b>				
2002-2014	9/144, 3.0 (1.3-6.0)	2/65, 1.5 (0.2-5.5)	5/63, 5.6 (1.7-16.1)	2/16, 2.4 (0.4-9.7)
1990-2001	4/107, 1.9 (0.6-5.0)	1/61, 0.8 (0.1-4.2)	3/36, 6.0 (1.2-24.3)	0/10, 0 (0-6.1)
1980-1989	3/59, 2.3 (0.5-7.1)	3/34, 5.9 (1.2-24.2)	0/19, 0 (0-4.6)	0/5, 0 (0-8.8)
1964-1979	4/39, 4.4 (1.2-13.6)	3/25, 7.7 (1.5-34.8)	1/11, 3.2 (0.2-25.0)	0/3, 0 (0-15.6)
<b>Complications during follow-up*</b>				
Extra intestinal manifestations	1/7, 10.1 (10.1-10.1)	no events	no events	1/1, 9.5 (9.5-9.5)
Primary sclerosing cholangitis	1/11, 3.4 (0.2-26.5)	0/8, 0 (0-58.3)	no events	1/1, 5.0 (0.2-52.2)
<b>Colitis*</b>				
Colitis ≥10 years	0/1, 0 (0-41.4)	no events	0/1, 0 (0-43.6)	too small sample
Colitis	5/89, 2.1 (0.7-5.0)	3/44, 2.1 (0.5-6.5)	2/30, 3.9 (0.6-18.0)	0/15, 0 (0-0.59.0)
<b>IBD surgery*</b>				
Bowel surgery	5/35, 5.0 (1.6-14.4)	4/12, 13.5 (3.0-68.5)	1/20, 2.0 (0.1-12.3)	0/3, 0 (0-15.7)
Perianal surgery	no events	no events	no events	no events
<b>At least one first degree relative with</b>				
Cancer	4/100, 2.5 (0.7-6.7)	2/55, 2.5 (0.4-9.8)	1/36, 2.2 (0.1-12.2)	1/9, 3.4 (0.2-26.8)
Cancer before age 50 years	3/53, 4.2 (0.9-15.3)	2/28, 5.0 (0.7-25.5)	0/20, 0 (0-15.9)	1/5, 10.2 (0.4-259.0)
Cancer after age 50 years	1/47, 1.1 (0.1-5.9)	0/27, 0 (0-6.1)	1/16, 3.3 (0.2-25.4)	0/4, 0 (0-15.9)

†Adjusted for matching variables (i.e. sex, age at diagnosis, calendar year at diagnosis and county).

‡ N cancers in IBD-patients/person centuries of follow up among IBD-patients, Hazard Ratio with 95%

Confidence Interval. \* In these stratified analyses follow-up started at the date of the first corresponding code.



**Supplemental Figure S3.** Adjusted<sup>†</sup> hazard ratio (HR) of first ever event of a cancer in the cohort of patients with inflammatory bowel disease (IBD) onset <18 years of age *before the 18<sup>th</sup> birthday*, compared with matched general population reference individuals (1964-2014), with first year of follow-up included. Numbers next to the forest plot represent the number of cancers in IBD patients, HRs with 95% Confidence Intervals.  
<sup>†</sup>Adjusted for matching variables (i.e. sex, age at diagnosis, calendar year at diagnosis and place of residence).

**Supplemental Table S9c.** Adjusted<sup>†</sup> hazard ratios (HR) for all cause cancer during all available follow-ups in childhood onset (<18 years) inflammatory bowel disease (IBD) patients and matched general population comparators in **2002-2014** (first year of follow up included).

	Inflammatory bowel disease n/pc, HR (95%CI) <sup>#</sup>	Ulcerative colitis n/pc, HR (95%CI) <sup>#</sup>	Crohn's disease n/pc, HR (95%CI) <sup>#</sup>	IBD-Unclassified n/pc, HR (95%CI) <sup>#</sup>
Total	55/305, 2.7 (2.0-3.6)	28/142, 2.8 (1.8-4.2)	19/132, 2.4 (1.4-3.9)	8/32, 3.2 (1.3-6.7)
0 - <1 years of follow-up	5/45, 4.5 (1.4-12.4)	1/20, 2.0 (0.1-12.3)	3/19, 29.8 (3.8-602.2)	1/5, 2.0 (0.1-12.3)
1 - <5 years of follow-up	8/146, 2.1 (0.9-4.2)	3/67, 1.7 (0.4-4.9)	5/63, 3.8 (1.2-10.2)	0/16, 0 (0-3.1)
≥5 years of follow-up	42/114, 2.7 (1.9-3.8)	24/54, 3.1 (1.9-4.8)	11/50, 1.7 (0.9-3.1)	7/10, 5.4 (2.0-13.3)
Female	30/136, 1.9 (1.3-2.8)	18/65, 2.3 (1.3-3.7)	8/57, 1.4 (0.6-2.7)	4/14, 2.3 (0.7-6.1)
Male	25/169, 5.4 (3.3-8.6)	10/77, 5.0 (2.2-10.4)	11/75, 6.0 (2.8-12.4)	4/17, 4.9 (1.3-15.7)
<b>Age of IBD onset</b>				
<6 years	1/14, 2.6 (0.1-17.9)	1/7, 5.1 (0.2-52.9)	0/5, 0 (0-16.1)	no events
<10 years	4/42, 8.1 (2.0-30.7)	1/21, 3.3 (0.2-26.0)	2/16, 11.3 (1.3-97.1)	1/5, Inf (0-Inf)
<15 years	14/168, 2.0 (1.1-3.5)	6/73, 1.9 (0.7-4.1)	5/77, 1.8 (0.6-4.3)	3/17, 3.3 (0.7-11.1)
<17 years	38/256, 2.5 (1.8-3.6)	17/117, 2.2 (1.3-3.6)	15/113, 2.7 (1.5-4.7)	6/27, 3.3 (1.2-7.8)
<18 years	55/305, 2.7 (2.0-3.6)	28/142, 2.8 (1.8-4.2)	19/132, 2.4 (1.4-3.9)	8/32, 3.2 (1.3-6.7)
<b>Complications during follow-up*</b>				
Extra intestinal manifestations	6/11, 5.5 (1.9-14.2)	3/4, 10.1 (1.9-50.7)	0/6, 0 (0-8.66)	3/1, 9.1 (1.8-43.4)
Primary sclerosing cholangitis	6/15, 5.6 (1.9-14.7)	4/9, 5.2 (1.4-16.6)	1/4, Inf (0-Inf)	1/2, 3.3 (0.2-25.4)
<b>Colitis*</b>				
Colitis ≥10 years	4/5, 3.9 (1.1-11.6)	1/3, 1.8 (0.1-11.5)	2/2, 35.9 (0.4-85.9)	1/1, 5.3 (0.2-61.5)
Colitis	30/150, 2.7 (1.8-4.0)	17/74, 2.7 (1.6-4.6)	8/53, 2.4 (1.0-5.0)	5/23, 3.3 (1.1-8.4)
<b>IBD surgery*</b>				
Bowel surgery	9/28, 3.0 (1.4-6.1)	3/9, 3.6 (0.8-12.6)	5/16, 2.5 (0.8-6.2)	1/2, 9.7 (0.4-246.0)
Perianal surgery	4/20, 6.7 (1.7-23.3)	2/2, 19.7 (1.9-424.0)	2/16, 4.1 (0.6-19.2)	no events
<b>IBD Medications*</b>				
N incident cases from 1July2005	3383	1480	1435	468
Never thiopurines nor anti-TNF	6/58, 2.7 (1.0-6.2)	5/31, 4.1 (1.3-11.0)	1/20, 1.7 (0.1-10.2)	0/7, 0 (0-7.2)
Only thiopurine	13/79, 4.2 (2.1-7.9)	4/35, 3.7 (1.0-10.8)	7/35, 6.6 (2.4-16.7)	2/9, 2.2 (0.3-8.6)
Only anti-TNF	too small sample	too small sample	too small sample	too small sample
Thiopurines and anti-TNF	2/28, 1.3 (0.2-4.7)	0/10, 0 (0-3.6)	1/15, 1.2 (0.1-6.7)	1/3, 10.0 (7.3-13.9)
<b>At least one first degree relative with</b>				
Cancer	13/57, 3.4 (1.7-6.1)	8/27, 5.0 (2.0-11.3)	3/24, 1.8 (0.4-5.3)	2/6, 5.3 (0.7-27.3)
Cancer before age 50 years	6/42, 2.4 (0.9-5.5)	4/18, 5.6 (1.5-18.1)	1/19, 0.9 (0.1-4.4)	1/5, 2.3 (0.1-15.8)
Cancer after age 50 years	7/16, 5.4 (2.0-13.1)	4/9, 4.8 (1.3-15.0)	2/6, 4.5 (0.6-21.9)	too small sample

<sup>†</sup>Adjusted for matching variables (i.e. sex, age at diagnosis, calendar year at diagnosis and county).

<sup>#</sup> N cancers in IBD patients/person centuries of follow-up among IBD patients, Hazard Ratio with 95%

Confidence Interval. \* In these stratified analyses follow-up started at the date of the first corresponding code.

**Supplemental Table S9d.** Adjusted† hazard ratios (HR) for all cause cancer **before the 18<sup>th</sup> birthday** in childhood onset (<18 years) inflammatory bowel disease (IBD) patients and matched general population comparators in **2002-2014** (first year of follow up included).

	Inflammatory bowel disease n/pc, HR (95%CI)‡	Ulcerative colitis n/pc, HR (95%CI)‡	Crohn's disease n/pc, HR (95%CI)‡	IBD-Unclassified n/pc, HR (95%CI)‡
Total	9/144, 3.0 (1.3-6.0)	2/65, 1.5 (0.2-5.5)	5/63, 5.6 (1.7-16.1)	2/16, 2.4 (0.4-9.7)
0 - <1 years of follow-up	5/41, 5.5 (1.7-16.6)	1/18, 2.0 (0.1-12.3)	3/18, Inf (0-Inf)	1/5, 2.5 (0.1-16.7)
1 - <5 years of follow-up	2/83, 1.1 (0.2-3.6)	1/36, 1.2 (0.1-6.8)	1/37, 1.4 (0.1-7.9)	0/9, 0 (0-6.0)
≥5 years of follow-up	2/20, 11.4 (1.4-96.9)	no events	1/9, 5.9 (0.3-68.1)	1/2, Inf (0-Inf)
Female	3/64, 3.1 (0.7-10.1)	1/30, 3.3 (0.2-26.6)	0/26, 0 (0-4.7)	2/7, 10.0 (1.2-82.9)
Male	6/80, 3.0 (1.1-7.0)	1/34, 1.0 (0.1-5.2)	5/37, 12.7 (3.4-51.3)	0/9, 0 (0-3.7)
<b>Age of IBD onset</b>				
<6 years	1/14, 2.6 (0.1-17.9)	1/7, 5.1 (0.2-52.9)	0/5, 0 (0-16.1)	no events
<10 years	4/40, 8.2 (2.0-30.9)	1/20, 3.3 (0.2-26.0)	2/16, 12.6 (1.4-118.0)	1/4, Inf (0-Inf)
<15 years	6/116, 2.9 (1.1-6.7)	1/51, 1.4 (0.1-8.0)	3/52, 3.8 (0.8-13.1)	2/13, 3.2 (0.5-14.1)
<17 years	9/140, 3.2 (1.4-6.5)	2/63, 1.7 (0.3-6.1)	5/62, 5.6 (1.7-16.1)	2/16, 2.8 (0.4-11.5)
<18 years	9/144, 3.0 (1.3-6.0)	2/65, 1.5 (0.2-5.5)	5/63, 5.6 (1.7-16.1)	2/16, 2.4 (0.4-9.7)
<b>Complications during follow-up*</b>				
Extra intestinal manifestations	1/5, 10.0 (10.0-10.0)	no events	no events	1/0, 9.5 (0.4-240.0)
Primary sclerosing cholangitis	1/6, 4.9 (0.2-51.2)	0/3, 0 (0-Inf)	no events	1/1, 10 (0.4-253)
<b>Colitis*</b>				
Colitis ≥10 years	0/0, 0 (0-58.2)	too small sample	too small sample	too small sample
Colitis	2/59, 1.3 (0.2-4.6)	1/27, 1.6 (0.1-9.6)	1/21, 1.9 (0.1-11.6)	0/11, 0 (0-6.1)
<b>IBD surgery*</b>				
Bowel surgery	1/8, 3.4 (0.2-26.9)	no events	1/4, 5.3 (0.3-55.3)	0/1, 0 (0-58.3)
Perianal surgery	no events	too small sample	no events	too small sample
<b>At least one first degree relative with</b>				
Cancer	1/23, 5.0 (0.2-51.6)	0/11, 0 (0-58.3)	no events	1/3, 10.3 (0.4-260.0)
Cancer before age 50 years	1/18, 5.0 (0.2-51.7)	0/8, 0 (0-58.3)	no events	1/2, 10.4 (0.4-263.3)
Cancer after age 50 years	no events	no events	no events	too small sample

†Adjusted for matching variables (i.e. sex, age at diagnosis, calendar year at diagnosis and county).

# N cancers in IBD patients/person centuries of follow-up in IBD patients, hazard ratio with 95% confidence interval. \* In these stratified analyses follow-up started at the date of the first corresponding code.